

CABOP Candidate Handbook Questions

001

A patient is to receive 600 mL of an intravenous solution over a 12-hour period. If a liter bottle is used and the administration set delivers 16 drops per mL, what should be the approximate rate of infusion?

- A. 1 drop/min
- B. 6 drops/min
- C. 13 drops/min
- D. 22 drops/min

002

A new drug is said to be an agonist of enkephalin receptors. Which of the following would be the most likely therapeutic use of this agent?

- A. treatment of an acute asthmatic attack
- B. treatment of an acute anginal attack
- C. relief of pain
- D. antidepressant therapy

003

A patient receiving a single dose of a drug shows a peak serum level of 32 mg/L. What will the serum level be after three half-lives assuming that first order elimination continues and no other doses are given?

- A. 1 mg/L
- B. 2 mg/L
- C. 4 mg/L
- D. 8 mg/L

004

A lupus-like syndrome may be induced by which of the following agents?

- A. procainamide
- B. naproxen
- C. chlorpromazine
- D. allopurinol

005

The usual Sig for Diflucan 150 mg tablet when used for vaginitis is

- A. i p.o. q.d. x 1 day.
- B. i p.o. q.d. x 3 days.
- C. i p.o. b.i.d. x 3 days.
- D. i p.o. q.d. x 7 days.

006

The broader the antibacterial spectrum of an antibiotic, the greater is the probability that the antibiotic will

- A. be absorbed after oral administration.
- B. be excreted slowly, and enhance nephrotoxicity.
- C. sensitize individuals, with resulting hypersensitivities.
- D. cause superinfection.

007

Which of the following counseling information should be provided to a patient receiving a new prescription for Nor-Q-D for birth control?

- A. Take the pill at the same time each day.
- B. Do not take a double dose if you miss a pill.
- C. Birth control is effective within 1 week.
- D. Stop the pills if you experience spotting at any time.

008

Which of the following antibiotics is indicated for the treatment of *Pneumocystis carinii* pneumonia?

- A. trimethoprim-sulfamethoxazole
- B. ampicillin
- C. erythromycin
- D. chloramphenicol

009

A new drug is said to have alpha-2 receptor agonist activity in the central nervous system. Which of the following conditions would be best treated with this agent?

- A. hypertension
- B. manic depressive illness
- C. Huntington's chorea
- D. cardiac dysrhythmias

010

A patient calls asking if he can fax his prescription from home and have his wife pick up the medication on her way home from the airport. The pharmacist can do which of the following?

- 1. Receive the prescription via fax directly from the patient.
 - 2. Call the physician and obtain an oral prescription.
 - 3. Call the physician and receive a fax directly from the prescriber.
- A. 1 only
 - B. 3 only
 - C. 1 and 3 only
 - D. 2 and 3 only

011

It is generally recommended that patients on isoniazid therapy also receive pyridoxine to prevent which of the following?

- A. aplastic anemia
- B. thrombocytopenia
- C. peripheral neuropathy
- D. agranulocytosis

012

The pharmacist receives a prescription for Zithromax. The patient profile identifies a penicillin allergy and a history of previous antibiotic usage. Which of the following information would help the pharmacist in deciding whether it is safe to dispense this prescription?

1. if the patient has had an allergic reaction to cephalosporins
 2. if the patient has had an allergic reaction to macrolides
 3. the nature and/or severity of the penicillin allergy
- A. 1 only
B. 2 only
C. 1 and 3 only
D. 2 and 3 only

013

A pharmacy must retain a copy of the invoice (or similar record of purchase) for every purchased drug or device which bears the legend "Caution: Federal Law prohibits dispensing without prescription" for a period of

- A. one year.
B. two years.
C. three years.
D. five years.

014

A clinic audited the use of progestin oral contraceptive agents in nursing mothers and found that approximately 10% of the patients became pregnant. Which of the following interventions would improve the effectiveness of this method of birth control?

- A. Increase the dose to 1 tablet b.i.d.
B. Take 6 tablets immediately after intercourse.
C. Take 1 tablet daily at exactly the same time every day.
D. Take 1 tablet daily for 21 days, then stop for 7 days and repeat cycle.

015

An inventory of controlled substances is required by the DEA every

- A. 3 months.
B. 6 months.
C. 12 months.
D. 24 months.

016

A physician calls and asks that you make 8 ounces of 1:1000 Zephiran solution. Upon looking at your stock you discover that all you have is the 17% W/V aqueous concentrate. To make the solution correctly, which of the following amounts should you use to make 8 ounces?

- A. 0.04 cc
- B. 0.17 cc
- C. 0.24 cc
- D. 1.41 cc

017

A pharmacist is working in a poison control center and receives a call regarding a cyanide poisoning. Which of the following represents the most effective therapy?

- A. dimercaprol
- B. penicillamine
- C. amyl and sodium nitrite plus sodium thiosulfate
- D. N-acetylcysteine

018

A refill authorization from a prescriber's office may be requested and received by which of the following?

- 1. pharmacist
 - 2. intern pharmacist
 - 3. pharmacy clerk-typist
- A. 1 only
 - B. 1 and 2 only
 - C. 2 and 3 only
 - D. 1, 2 and 3

019

A physician plans on stopping clonidine therapy in a patient. Which of the following BEST describes the clonidine withdrawal syndrome?

- A. drowsiness, dry mouth, constipation, and hypertension
- B. bradycardia, chest pain, syncope, and hypotension
- C. restlessness, tachycardia, increased salivation, and hypertension
- D. lightheadedness, tinnitus, diarrhea, and hypertension

020

Which of the following is used as a specific iron chelater?

- A. D-penicillamine
- B. EDTA
- C. ferrioxamine
- D. deferoxamine

021

Which of the following may be used to treat an acute gouty arthritis attack?

- A. sulfinpyrazone
- B. indomethacin
- C. probenecid
- D. allopurinol

022

Which of the following drugs should be used to treat hyperuricemia in a patient with chronic renal failure whose creatinine clearance is between 10 and 30 mL/min?

- A. probenecid
- B. sulfinpyrazone
- C. colchicine
- D. allopurinol

023

A 22-year-old semicomatose man was admitted to the emergency department by his friends who indicate he "overdosed" on heroin. His respiratory rate is 6/min, and his BP is 80/60 mm Hg. His initial treatment should include administration of which of the following?

1. naloxone
2. activated charcoal
3. flumazenil

- A. 1 only
- B. 3 only
- C. 1 and 2 only
- D. 2 and 3 only

024

A patient complains of constipation when taking antacids. Which of the following antacids is MOST LIKELY to cause constipation?

- A. Amphojel
- B. Riopan
- C. Mylanta II
- D. Maalox Plus

025

A patient who has been taking an oral contraceptive for the past 2 years has informed her physician that she wishes to become pregnant. Because laboratory tests show that she has a negative rubella titer, he vaccinates her with rubella vaccine. She should be advised to

- A. discontinue taking the oral contraceptive immediately.
- B. continue taking the oral contraceptive until the end of the current cycle.
- C. discontinue taking the oral contraceptive immediately and avoid sexual intercourse until the end of the current cycle.
- D. continue taking the oral contraceptive for at least two additional cycles.

026

A patient enters the pharmacy on a Friday night with an empty vial of phenytoin. The label reads, "Phenytoin 100 mg #100, Take 3 capsules daily for seizures. No Refills." The pharmacist calls the physician, but only talks to the answering machine. Which of the following actions by the pharmacist is most appropriate?

- A. Send the patient to the emergency department.
- B. Give the patient three capsules and talk with the physician on Monday.
- C. Tell the patient to return on Monday when the physician is available.
- D. Refill the full prescription and notify the physician on Monday.

027

A physician orders 50 mg of Hypaque to be administered intradermally as a 50% solution. The volume of the solution that will contain the prescribed dosage is which of the following?

- A. 0.01 mL
- B. 0.1 mL
- C. 1.0 mL
- D. 10.0 mL

028

A 45-year-old man with a history of acute gout is to be placed on hemodialysis for chronic renal failure. What is the safest, most effective way to manage the patient's hyperuricemia between attacks?

- A. colchicine 0.6 mg b.i.d.
- B. probenecid 0.5 to 1.0 g q12h
- C. alkalization with sodium bicarbonate
- D. no drug, since hemodialysis will reduce uric acid levels

029

A patient on mirtazapine therapy for depression requests to be switched to an alternate drug with less sedation. Which of the following would be the best choice?

- A. doxepin
- B. trazodone
- C. imipramine
- D. sertraline

030

Which of the following products MUST be stored under refrigerated conditions in the pharmacy?

1. influenza vaccine
2. tetanus toxoid
3. purified protein derivative

- A. 1 only
- B. 3 only
- C. 1 and 2 only
- D. 1, 2, and 3

031

A physician asks the pharmacist about a drug in the FDA Pregnancy Category-A. Which of the following should the pharmacist tell the physician about this medication?

- A. Under no circumstance should this medication be taken during pregnancy.
- B. Studies in pregnant women have not demonstrated a risk to the fetus during pregnancy.
- C. Animal studies have not demonstrated a risk to the fetus, but there are no adequate studies in pregnant women.
- D. There is evidence of fetal risk, but the potential benefits from use of the drug may be acceptable despite its risks.

032

Which of the following corticosteroids is most useful for treating asthma with alternate day dosing to minimize hypothalamic-pituitary-adrenal axis suppression?

- A. dexamethasone
- B. beclomethasone
- C. cortisone
- D. prednisone

033

A pharmacist wants to order Novolin NPH. Which of the following best describes this insulin?

- A. human insulin
- B. insulin aspart
- C. purified pork insulin
- D. insulin lispro

034

The Pharmacists Recovery Program is a rehabilitation program for individuals whose competency may be impaired due to

1. abuse of alcohol and/or other drugs.
2. mental illness.
3. conviction of a felony.

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2, and 3

035

A 53-year-old patient with heart failure and high blood pressure was put on a regimen of the following drugs. After 10 days, angina was noted on mild exertion. Which drug MOST LIKELY caused this symptom?

- A. HCTZ
- B. digoxin
- C. hydralazine
- D. triamterene

036

A pharmacist receives a new order for vancomycin 500 mg IVPB q6h for treatment of diarrhea due to *Clostridium difficile*. Which of the following is the most appropriate action?

- A. Dispense the medication as ordered.
- B. Recommend a decrease in the frequency.
- C. Recommend changing to the oral dosage form.
- D. Advise the physician that the drug is inactive against the organism.

037

A hospital pharmacy receives notification from a manufacturer that a specific lot number of a drug is being recalled. The pharmacy department should do which of the following?

1. Destroy all stock of recalled lot.
 2. Remove any stock of recalled lot from patient care service centers.
 3. Remove any stock of recalled lot from the pharmacy.
 4. Notify the physicians of any patients who may have received medication belonging to the recalled lot.
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- A. 1 and 2 only
 - B. 1 and 4 only
 - C. 2 and 3 only
 - D. 3 and 4 only

038

Compared to other available antipsychotic agents, clozapine produces the lowest incidence of which of the following side effects?

- A. sedation
- B. tardive dyskinesia
- C. orthostatic hypotension
- D. anticholinergic effects

039

ITEM GOES WITH ATTACHMENT A

A 45-year-old patient with metastatic colon cancer was admitted to the hospital because of a bowel obstruction and because he could not take any medication by mouth. The patient was taking Dilaudid 4 mg orally every 4 hours around-the-clock to control pain. The patient's physician wanted to switch a morphine sulfate PCA (patient-controlled analgesia) pump while awaiting surgery and the physician called the pharmacist to get advice on the equivalent dosing. Which of the following continuous infusion rates would you recommend?

- A. 1.3 mg/hr
- B. 4.8 mg/hr
- C. 24 mg/hr
- D. 32 mg/hr

040

Which of the following selections is true regarding patients who are receiving lithium carbonate therapy?

1. They should be on a sodium-restricted diet.
 2. Toxic effects may develop at doses near the therapeutic range.
 3. A hypertensive crisis may occur with certain foods.
- A. 1 only
B. 2 only
C. 1 and 2 only
D. 2 and 3 only

041

Persons taking oral griseofulvin will experience enhanced absorption of the agent if these individuals also

- A. take antacids.
B. eat a fatty meal.
C. take the drug 2 hours after meals.
D. take ammonium chloride.

042

A patient with newly diagnosed Parkinson's disease receives a new prescription for benztropine mesylate 2 mg b.i.d. This medication would most likely cause adverse effects with which of the following diseases noted in the patient's medical profile?

1. hypertension
 2. xerostomia
 3. benign prostatic hyperplasia
- A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only

043

A hospital pharmacy receives an investigational drug and the pharmacist fills out an investigational drug accountability form. Which of the following information should be on the form?

1. protocol number
 2. therapeutic indication
 3. drug name, dosage form, and strength
 4. amount received, lot number, and expiration date
- A. 1 and 2 only
B. 1 and 4 only
C. 1, 3, and 4 only
D. 2, 3, and 4 only

044

A nurse calls stating that a physician has changed an order from KCl 10%, 15 mL p.o. b.i.d. to an equivalent dose of tablets for a patient who cannot tolerate the liquid. The pharmacy stocks KCl 10 mEq slow-release tablets. Which of the following should the nurse administer to the patient?

- A. 1 tablet t.i.d.
B. 2 tablets b.i.d.
C. 2 tablets q.d.
D. 3 tablets b.i.d.

045

Which of the following is the preferred initial intervention for a patient who weighs 80 kg and has acute thrombophlebitis?

- A. warfarin 5 mg q.d.
B. heparin 6000 units IV
C. enoxaparin 40 mg SQ
D. heparin 5000 units SQ

046

Which of the following requires no dosage adjustment in a patient with severe renal failure?

- A. penicillin G
- B. vancomycin
- C. clindamycin
- D. cefoxitin

047

How many grams of a drug are required to make 3 fl oz of a solution of such strength that 1 teaspoonful diluted to 1 qt will yield a 1:5000 solution?

- A. 1.3
- B. 2.4
- C. 3.5
- D. 4.8

048

Pyridostigmine bromide is a

- A. parasympathomimetic.
- B. parasympatholytic.
- C. sympathomimetic.
- D. skeletal muscle relaxant.

049

Which of the following is most effective in terminating an acute attack of paroxysmal supraventricular tachycardia in a hypotensive patient?

- A. amiodarone
- B. verapamil
- C. adenosine
- D. propranolol

050

Which of the following is a common consequence of severe, drug-induced leukopenia?

- A. sepsis
- B. anemia
- C. bone pain
- D. thrombocytopenia

051

The function of potassium clavulanate in Augmentin is to

- A. protect amoxicillin from biodegradation.
- B. decrease the renal excretion of amoxicillin.
- C. facilitate penetration of amoxicillin into bacteria.
- D. increase the oral absorption of amoxicillin.

052

A patient on cholestyramine is started on digoxin in an oral dose of 0.25 mg/day. Based on her body size and renal function, this dose was predicted to produce a steady-state digoxin serum concentration of 1.2 ng/mL. However, her steady-state value was later measured and found to be 2.4 ng/mL. Which of the following could explain this finding?

- A. The digoxin is interacting with cholestyramine.
- B. The patient's digoxin clearance was lower than predicted.
- C. The patient's volume of distribution was lower than predicted.
- D. The actual bioavailability of the digoxin product was lower than predicted.

053

A patient who experiences accelerated gastric emptying may be expected to show a decrease in absorption of a drug that is

- A. absorbed primarily from the ileum.
- B. absorbed primarily from the jejunum.
- C. a weak acid.
- D. a weak base.

054

A 55-year-old farmer has a history of asthma. The asthma is worsening with the onset of the fall harvest season. Currently, the patient requires albuterol 4 times per day and is noncompliant with beclomethasone 2 puffs q.i.d. Which of the following is the best regimen modification to better control his asthma?

- A. Add zileuton to relieve cold air induced bronchospasm.
- B. Add zafirlukast to relieve acute asthma attacks.
- C. Change albuterol to salmeterol.
- D. Change beclomethasone to flunisolide.

055

A man who is obese has been taking sibutramine (Meridia) 5 mg q.d. for the past 6 weeks, but has not lost any weight. Which of the following is the best explanation for this apparent treatment failure?

- A. The dose is too low.
- B. The patient should also be taking phentermine.
- C. Meridia is less effective in male patients.
- D. It is common not to lose weight within the first 6 weeks.

056

What is the normal adult dose of injectable ranitidine when given every 6 to 8 hours for an intractable duodenal ulcer?

- A. 20 mg
- B. 50 mg
- C. 150 mg
- D. 300 mg

057

An intern pharmacist receives a prescription written by a dentist for acyclovir 200 mg p.o. five times daily for oral fever blisters. The intern pharmacist reviews the prescription with the pharmacist before dispensing. Which of the following actions by the intern pharmacist is most appropriate?

- A. Fill the prescription as written.
- B. Do not fill the prescription because the dose is excessive.
- C. Tell the patient to stop taking the medication after 3 days.
- D. Do not fill the prescription because it was written by a dentist.

058

Which of the following vaccines is contraindicated in a child on maintenance therapy for acute lymphocytic leukemia?

- A. trivalent oral polio vaccine (TOPV)
- B. measles, mumps, rubella (MMR)
- C. varicella vaccine (Varivax)
- D. influenzae vaccine

059

A chart order for quinidine sulfate 325 mg q h.s. p.r.n. leg cramps is sent to the inpatient pharmacy. The pharmacist should

- A. dispense the medication as written.
- B. verify the dose with the prescribing physician.
- C. verify the indication of the drug with the physician.
- D. verify the indication and frequency of the drug with the physician.

060

A patient was admitted to the hospital in an acute, agitated state, and was given a therapeutic dose of a drug. One-half hour later, the blood pressure was found to be 85/50 mm Hg. Normal blood pressure for this patient was 120/80 mm Hg. Which of the following drugs would MOST LIKELY cause this effect?

- A. hydroxyzine
- B. chlorpromazine
- C. fluoxetine
- D. diazepam

061

A patient needs to be able to redose his sleeping medication in the middle of the night. Which of the following should the pharmacist recommend?

- A. zolpidem
- B. triazolam
- C. trazadone
- D. zaleplon

062

Tetrahydrozoline is used to do which of the following?

- A. Alter pupillary diameter.
- B. Shrink the capillary network in the conjunctival membrane covering the sclera.
- C. Relieve congestion in the anterior chamber of the eye.
- D. Facilitate drainage of lacrimal fluid into the nose.

063

One of the common effects of digitalis on an ECG tracing would be to

- A. prolong the QRS interval.
- B. prolong the PR interval.
- C. prolong the QT interval.
- D. shorten the QRS interval.

064

The time required to reach steady state during multiple dosing of a drug that follows first-order kinetics is dependent on the

- A. half-life of drug.
- B. half-life, dose, and dosing interval.
- C. dose and dosing interval.
- D. half-life and dosing interval.

065

Which of the following parenteral products is an equi-analgesic dose for morphine sulfate 10 mg IM?

- A. codeine 60 mg
- B. nalbuphine 20 mg
- C. meperidine 75 mg
- D. hydromorphone 4 mg

066

Rifampin has been associated with which of the following changes in urine color?

- A. red-orange
- B. blue-green
- C. brown
- D. no change in color

067

To treat bronchial asthma, a drug should specifically do which of the following?

- A. block alpha receptors
- B. stimulate beta-1 receptors
- C. stimulate beta-2 receptors
- D. block beta-1 receptors

068

A nurse requests information on the administration of diltiazem for a patient. The product can be administered orally and

- A. intravenously
- B. sublingually
- C. intramuscularly
- D. subcutaneously

069

Which of the following drugs is most effective against methicillin-resistant staphylococcal infections?

- A. cefazolin
- B. ampicillin
- C. vancomycin
- D. imipenem

070

Which of the following is CONTRAINDICATED in a patient who develops bronchoconstriction secondary to aspirin?

1. sulindac
 2. piroxicam
 3. propoxyphene
- A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only

071

A 57-year-old woman who flew to California from Taiwan 2 days ago complains of a progressively swollen left calf over the past day. Her calf is sore and she can feel a "cord" in her leg. This patient's symptoms are most consistent with which of the following?

- A. hypokalemia
B. acute cellulitis
C. peripheral neuropathy
D. deep venous thrombosis

072

Which chemotherapeutic agent has leucovorin as an antidote?

- A. Doxorubicin
B. Methotrexate
C. Mercaptopurine
D. Vincristine

073

A 65-year-old man was prescribed furosemide 2 weeks ago for hypertension and mild pedal edema. The patient complains of recent leg cramps while walking and asks if quinine would help. What would be the most appropriate question to ask prior to making a recommendation?

- A. "Are you allergic to furosemide?"
B. "Are you drinking plenty of fluids?"
C. "Are you taking potassium supplements?"
D. "Has the pedal edema improved since starting the medication?"

074

A 4-year-old child who weighs 41.8 lb is to receive 15 mg/kg per day of 1% rifampin suspension. How much should be administered daily?

- A. 1.50 mL
- B. 2.85 mL
- C. 14.25 mL
- D. 28.50 mL

075

Which of the following non-pharmacological treatments may be recommended for patients with rheumatoid arthritis?

- 1. weight reduction, if obese
 - 2. adequate rest
 - 3. range of motion exercises
 - 4. avoid calcium-rich foods
- A. 1 and 2 only
 - B. 3 and 4 only
 - C. 1, 2, and 3 only
 - D. 2, 3, and 4 only

076

An insulin-dependent diabetic begins using 10 units of regular insulin and 30 units of NPH each morning and develops a hypoglycemic reaction at 3:00 PM. An explanation for the cause of this reaction is which of the following?

- 1. skipped lunch
 - 2. just finished playing tennis
 - 3. dose of regular insulin is too high
- A. 1 only
 - B. 3 only
 - C. 1 and 2 only
 - D. 2 and 3 only

077

A physician calls in an order for Darvocet-N 100 #20 - 1 q4h prn pain.
Which of the following is CORRECT?

- A. A triplicate is needed, so the prescription cannot be filled.
- B. A handwritten prescription from the physician is needed before the prescription can be filled.
- C. If the physician authorizes refills, the prescription can be refilled up to five times within 6 months.
- D. If the physician authorizes refills, the prescription can be refilled without further restrictions for not more than 1 year.

078

If the dissolution time of 5 mg of a drug in tablet Brand X is four times longer than the dissolution rate of 5 mg of the same drug in tablet Brand Y, one should expect that

- A. the disintegration time for Brand X is shorter than the disintegration time of Brand Y.
- B. the peak blood/serum level for Brand X will occur sooner than the peak blood/serum level for Brand Y.
- C. a larger percentage of the drug in Brand X will be absorbed than from Brand Y.
- D. assuming equal disintegration rates, the Brand Y tablet will give a peak blood/serum level sooner than Brand X.

079

A 36-year-old woman brings in a new prescription for benazepril 10 mg q.d.
Before dispensing a prescription for benazepril, the pharmacist should make sure the patient

- A. is not pregnant.
- B. is not breastfeeding.
- C. does not have diabetes.
- D. is not taking a P450 enzyme inhibitor.

080

A pharmacist receives a prescription for 100 Dilaudid 4 mg tablets, but only has 50 tablets in stock. Which of the following is the pharmacist's best course of action?

- A. Tell the patient that he cannot fill the prescription because he has less than the quantity called for.
- B. Fill the prescription for the 50 and tell the patient that the balance will be provided within 72 hours or else no additional tablets can be dispensed.
- C. Fill the prescription for 50 and tell the patient to come back for a refill of 50 when he/she runs out.
- D. Fill the prescription with 200 Dilaudid 2 mg and make a notation on the prescription.

081

Saline cathartics, e.g., magnesium citrate and sodium phosphate, are commonly used

- A. when quick action is desired.
- B. as an alternative to lubricants in chronic constipation.
- C. when gentle delayed action is preferred.
- D. following a myocardial infarction.

082

A pharmacist dispenses nitroprusside 50 mg in 250 mL of D5W in a clear plastic bag, labeled it, and sent it to the ICU. The nurse calls the pharmacy and explains that the patient's blood pressure was stable until 3 hours ago, but now she keeps having to increase the infusion rate. She also notes that the solution is pink. What is the most likely explanation for this?

- A. The diluent used was incorrect.
- B. The solution is over concentrated.
- C. The admixture should be dispensed in a glass container.
- D. The infusion container should have been protected from light.

083

A 48-year-old woman with exertional angina and mild hypertension has been treated with the medications listed below for the past 4 months. She now complains of muscle weakness and leg cramps. Which of these drugs is MOST LIKELY to be responsible for these symptoms?

- A. hydrochlorothiazide 50 mg daily
- B. isosorbide dinitrate 10 mg q.i.d.
- C. propranolol 40 mg q6h
- D. verapamil SR 120 mg b.i.d.

084

A 63-year-old male with a history of hypertensive cardiovascular disease is evaluated in the emergency department. An electrocardiogram shows sinus bradycardia (30 beats/min) and S-T segment depression. His blood pressure is 90/50 mm Hg. The best agent to use for this condition is which of the following?

- A. lidocaine
- B. quinidine
- C. atropine
- D. digoxin

085

A pharmacist has on hand acetic acid, U.S.P. (36% weight/volume). How much of this would the pharmacist use to prepare the following?

acetic acid solution 5%

Disp. 1 pint

Sig: 1 tablespoonful per pint warm water

- A. 2.2 mL
- B. 66.0 mL
- C. 77.4 mL
- D. 132.0 mL

086

ITEM GOES WITH ATTACHMENT B

A physician calls and explains that he is sending a patient to your pharmacy to start calcium supplementation. The physician wants the patient to receive 1.0 g of calcium daily. Using the table below, approximately how many tablets of calcium lactate 500 mg will provide the prescribed amount of daily calcium?

- A. 2
- B. 5
- C. 10
- D. 15

087

Azathioprine toxicity might be expected in a patient who starts taking which of the following drugs?

- A. cyclosporine
- B. prednisone
- C. ranitidine
- D. allopurinol

088

A 60-year-old man asks the pharmacist if there is something he can take for his "creaky knees that ache, especially in the morning." He has noticed the pain for the past 3 months and now has increased joint stiffness after inactivity. There is no inflammation present. Which of the following recommendations is the most appropriate to provide to the patient?

1. Apply capsaicin cream and cover with an elastic bandage.
 2. Take acetaminophen for symptomatic relief.
 3. Recommend weight-training exercises to strengthen muscles.
 4. Recommend swimming, stretching, or non-impact aerobic exercise.
- A. 1 and 3 only
 - B. 1 and 4 only
 - C. 2 and 3 only
 - D. 2 and 4 only

089

Timolol has antagonist activity on which of the following receptors?

1. beta-1
 2. beta-2
 3. alpha
-
- A. 1 only
 - B. 1 and 2 only
 - C. 2 and 3 only
 - D. 1, 2, and 3

090

A 70-kg man is being treated for congestive heart failure. What is the intravenous loading dose of digoxin that would be required to achieve a plasma concentration of 1.5 ng/mL for this patient? (Average V_d for digoxin is 7.3 L/kg)

- A. 0.25 mg
- B. 0.50 mg
- C. 0.75 mg
- D. 1.00 mg

091

At the end of each month, the pharmacist is required to send one copy of a filled triplicate prescription to which of the following agencies?

- A. California State Board of Pharmacy
- B. regional office of the DEA
- C. California State Department of Justice
- D. U.S. Department of Justice

092

The following guidelines can be used to estimate the number of calories/24 hours required to maintain a patient's weight:

First 10 kg	- - - - -	100 cal/kg
Second 10 kg	- - - - -	50 cal/kg
Remaining kg	- - - - -	20 cal/kg

Using this guideline, the number of calories required for a 143-lb man would be which of the following?

- A. 1050
- B. 1300
- C. 2400
- D. 2730

093

Which of the following could be used to treat respiratory acidosis?

- 1. treatment with a bronchodilator
- 2. mechanical respiration
- 3. rebreathing exhaled air

- A. 1 only
- B. 3 only
- C. 1 and 2 only
- D. 2 and 3 only

094

Syncope occurs most frequently after the first dose administration of which of the following drugs?

- A. diltiazem
- B. clonidine
- C. prazosin
- D. captopril

095

Patients in chronic renal failure should ordinarily avoid the use of which of the following?

1. triamterene
 2. spironolactone
 3. furosemide
- A. 1 only
B. 3 only
C. 1 and 2 only
D. 2 and 3 only

096

A pharmacy receives a prescription for lorazepam 1 mg #100, Sig: Take 1 tablet twice daily, with 2 refills authorized by the prescriber. The patient requests the 2 additional refills of lorazepam because he will be out of the country for 6 months. Which of the following is the best course of action by the pharmacist?

- A. Fill the 2 refills of lorazepam in 2 containers, each labelled correctly as lorazepam 1 mg #100.
- B. Fill the entire amount of lorazepam 1 mg #300 in 1 container, correctly labelled.
- C. Call the prescriber for authorization to dispense the 2 refills of lorazepam 1 mg.
- D. Tell the patient that more than 100 tablets may not be taken out of the country.

097

A pharmacist responds to a Code Blue for an 80-kg patient in cardiopulmonary arrest. The pharmacist prepares 400 mg of dopamine in 250 mL D5W. The infusion is started at 40 mL/hr. Which of the following is the most likely result of this dosage?

- A. decreased pulse rate
- B. increased urine output
- C. decreased cardiac output
- D. increased blood pressure

098

A 75-year-old female has senile dementia of the Alzheimer's type, arthritis, and congestive heart failure. Her current medications include lorazepam 1 mg t.i.d. for agitation, sulindac 200 mg b.i.d., furosemide 20 mg q.d., and digoxin 0.125 mg q.d. Which of the following drugs would be most likely to INCREASE confusion in this patient?

- A. lorazepam
- B. sulindac
- C. digoxin
- D. furosemide

099

A new drug is said to have beta-1 and beta-2 antagonist activity. Which of the following conditions would this drug be MOST USEFUL in treating?

- A. hypoglycemia
- B. asthma
- C. angina
- D. heart failure

100

Ophthalmic solutions frequently contain methylcellulose as an ingredient because it

- A. prolongs contact time.
- B. makes these solutions isotonic with tear secretions.
- C. reduces intraocular tension.
- D. increases penetrability of the active ingredient.

101

The stability of IV ampicillin can be maximized by admixing in which of the following?

- A. dextrose 5% in water
- B. dextrose 5% in normal saline
- C. sterile water for injection
- D. normal saline

102

Which of the following drugs have antiplatelet activity?

1. aspirin
 2. ticlopidine
 3. warfarin
-
- A. 1 only
 - B. 1 and 2 only
 - C. 2 and 3 only
 - D. 1, 2, and 3

103

How many milligrams of hydrocortisone are contained in 30 grams of a 0.5% ointment of hydrocortisone?

- A. 0.15
- B. 15
- C. 150
- D. 1500

104

The antibiotic agents on the formulary that are used for common pediatric infections are being reevaluated. Disregarding cost and spectrum of activity, which of the following agents would be the most desirable due to dosing frequency?

- A. Suprax
- B. Ceclor
- C. Biaxin
- D. Augmentin

105

Which of the following products is available without a prescription for treatment of canker sores?

- A. Duoderm
- B. Hurricaine
- C. Xylocaine 2% Viscous
- D. Kenalog in Orabase

106

The solubility of a substance is 1 gram in 3 mL of water. When 5 grams are dissolved in 15 mL of water, the volume of the resulting solution is 16.8 mL. How many grams of the substance should be used to make 200 mL of a saturated solution?

- A. 50.0 g
- B. 59.5 g
- C. 63.3 g
- D. 66.6 g

107

How many grams of a 1:400 powder dilution of atropine sulfate would be required to make 60 g of a mixture containing 0.4 mg of atropine sulfate per 500 mg?

- A. 0.00012 g
- B. 4.3 g
- C. 9.6 g
- D. 19.2 g

108

Patients using bisacodyl tablets should be advised to do which of the following?

- A. Avoid the use of alcohol.
- B. Avoid taking with fatty meals.
- C. Avoid taking with antacids.
- D. Watch for a change in urine color.

109

Gastric ulceration, hypertension, and sodium retention are possible effects of which of the following drugs?

1. penicillamine
2. gold sodium thiomalate
3. indomethacin

- A. 1 only
- B. 3 only
- C. 1 and 2 only
- D. 2 and 3 only

110

Which of the following is the most appropriate recommendation for a nonprescription medication to treat a patient who is obese and has a red, macerated rash in warm, moist areas of the skin including skin folds?

- A. A & D ointment t.i.d.
- B. miconazole cream b.i.d.
- C. diphenhydramine cream q.i.d.
- D. bacitracin-polymyxin B ointment t.i.d.

111

Which of the following would be most effective in managing signs and symptoms of heroin withdrawal?

- A. haloperidol
- B. chlorpromazine
- C. clonidine
- D. propranolol

112

Which of the following provides active immunity?

- A. hepatitis B immune globulin (HBIG)
- B. tetanus diphtheria toxoids (Td)
- C. varicella-zoster immune globulin (VZIG)
- D. purified protein derivative (PPD)

113

A pharmacist receives an order from a physician for Alupent 1% solution. All that is on hand is the commercially prepared 5% solution. Assuming that the quantity to be dispensed is to be determined by the pharmacist, and that normal saline can be used as a diluent, the pharmacist could prepare the solution by doing which of the following?

- A. adding 10 cc of Alupent 5% to 50 cc of normal saline
- B. removing 4 cc of saline from a 20 cc normal saline bottle and replacing with 4 cc of Alupent 5%
- C. removing 5 cc of saline from a 30 cc normal saline bottle and replacing with 5 cc of Alupent 5%
- D. adding 6 cc of Alupent 5% to 30 cc of normal saline

114

A pharmacist is asked to compound a product that contains 300 mg of hydrocortisone in solution in a 30 mL volume. Which of the following references is most likely to provide some information on the solubility characteristics of the drug?

- A. Pharm Index
- B. Facts and Comparisons
- C. American Drug Index
- D. Merck Index

115

A man with prostate cancer has been started on hormonal therapy with leuprolide. What is the BEST source of patient information concerning leuprolide?

- A. package insert
- B. Facts and Comparisons
- C. USP DI Advice to the Patient
- D. patient education monographs for LHRH antagonists

116

ITEM GOES WITH ATTACHMENT C

In the patients studied, as reported in tables 2 and 3 above, a statistically significant improvement in FEV_1 (percent predicted) was produced by fenoterol compared to epinephrine at which of the following times?

- 1. 20 minutes
 - 2. 60 minutes
 - 3. 90 minutes
-
- A. 1 only
 - B. 3 only
 - C. 1 and 2 only
 - D. 1, 2, and 3

117

Which of the following is recommended for treatment of angina?

- A. nadolol
- B. enalapril
- C. hydralazine
- D. dipyridamole

118

A patient with rheumatic heart disease hands you a prescription for amoxicillin 2 g orally 1 hour prior to the dental procedure. The prescription was written 9 months ago. The patient tells you that he has an appointment for a tooth extraction tomorrow. Which of the following is the best action for the pharmacist?

- A. Fill the prescription as written.
- B. Do not fill the prescription, the dose is incorrect.
- C. Do not fill, it is not in the scope of dental practice.
- D. Fill the prescription if you can verify it with the prescriber.

119

A 35-year-old man has the following results from his annual physical examination:

Hgb	12 g/dL	(14 g/dL)
Hct	35%	(40%)
MCV	110 u3	(90 u3) mu symbol and super 3
Reticulocyte count	2.9%	(1%)
Folate	10.0 ng/mL	(> 7 ng/mL)

Which of the following therapies would be most appropriate for his blood counts?

- A. folic acid 1 mg p.o. q.d.
- B. vitamin B₁₂ 1 mg IM every month
- C. ferrous sulfate 325 mg 2 tablets p.o. b.i.d.
- D. erythropoietin 150 U/kg SQ three times weekly

120

A pharmacist is presented with a prescription for Proventil MDI
Sig: 2 puffs t.i.d. The physician did not specify "Do Not Substitute."
The pharmacy stocks only Ventolin MDI. Which of the following
statements is true regarding substitution of Ventolin
for Proventil?

1. The charge to the patient for Ventolin must be less than for Proventil.
 2. The patient must be informed of the substitution.
 3. Ventolin must not be substituted because both drugs are brand name products.
- A. 1 only
B. 2 only
C. 3 only
D. 1 and 2 only

121

Which of the following is a legal prescription?

- A. An optometrist writes a Diamox prescription for a patient with glaucoma.
- B. A dentist writes a Toradol prescription for his sister, a patient in his office.
- C. A physician writes a dicloxacillin prescription for his cat's foot infection.
- D. A physician writes a Vicodin-ES prescription in tapering doses for an outpatient enrolled in a detoxification program.

122

ITEM GOES WITH ATTACHMENT D

Two different drugs are administered to a patient by intravenous injection on six different occasions. The time between each test is 1 week. In each case the time for elimination of one-half the dose is determined. In looking at the data below, what is the order of the elimination rate process of drug 2?

- A. zero order
B. first order
C. second order
D. constant order

123

Which of the following is best used prophylactically for poison oak dermatitis?

- A. Tecnu cream
- B. Aveeno bath
- C. Benadryl spray
- D. Caladryl lotion

124

Which of the following antibiotics is the most appropriate to recommend to a physician who is treating a 56-year-old woman with beta-lactamase-negative *Haemophilus influenzae* pneumonia, renal insufficiency (Scr of 2.0 mg/dL), and a history of tonic-clonic seizures?

- A. imipenem
- B. ampicillin
- C. levofloxacin
- D. piperacillin/clavulanic acid

125

Drugs are often implicated as a cause of liver damage and/or dysfunction. Which of the following groups of blood tests (if elevated) would indicate an abnormality in liver function?

- A. amylase, bilirubin, LDH
- B. Coomb's test, hemoglobin, albumin
- C. CPK, AST (SGOT), alkaline phosphatase
- D. prothrombin time, AST (SGOT), alkaline phosphatase

126

A mother presents a prescription for her 2-year-old, 14-kg daughter with otitis media that reads:

amoxicillin 400 mg/5 cc 150 cc
Sig: 7.5 cc q12h

The pharmacist should do which of the following?

- A. Fill the prescription as written.
- B. Call the prescriber and question the dose.
- C. Call the prescriber and question the duration of therapy.
- D. Call the prescriber and question the frequency of the dose.

127

A hospital pharmacist may perform which of the following functions in accordance with established policies, procedures, or protocols?

- 1. Order diagnostic imaging tests.
 - 2. Administer drugs and biologicals by injection.
 - 3. Start empiric antibiotic therapy pending culture results.
 - 4. Draw blood for drug level.
-
- A. 1 and 2 only
 - B. 1 and 4 only
 - C. 2 and 3 only
 - D. 3 and 4 only

128

A pediatrician requests the addition of a twice daily oral cephalosporin to your formulary. Which of the following should be considered?

- A. cefixime
- B. cefaclor
- C. cefprozil
- D. cephalexin

129

How many grams of phenol should be added to 150 g of water in order to make a 10% W/W solution?

- A. 1.5
- B. 12.5
- C. 15.0
- D. 16.7

130

Which of the following is responsible for the slow onset of propylthiouracil in the treatment of Graves' disease?

- A. It has a long half-life.
- B. Free drug is decreased by its high protein binding.
- C. The breakdown of existing thyroid hormones is not changed.
- D. Propylthiouracil needs to be first metabolized to an active metabolite.

131

A 2-year-old, 15-kg boy is brought into the emergency department with a history of ingesting 30 FeSO₄ 325 mg tablets (20% iron) 45 minutes ago. The minimal toxic dose of elemental iron is 40 mg/kg/dose. He is complaining of nausea and stomach pain, but is alert and active. Which of the following should be done first?

- A. Draw a serum iron level.
- B. Give activated charcoal.
- C. Administer deferoxamine.
- D. Initiate gastric lavage.

132

When providing medication counseling for nitroglycerin tablets, which of the following statements are appropriate?

- 1. Confirm potency by stinging sensation under tongue.
 - 2. The patient should be seated when taking the tablet.
 - 3. Notify a physician immediately if pain persists after taking 3 tablets at 5-minute intervals.
- A. 1 only
 - B. 1 and 2 only
 - C. 2 and 3 only
 - D. 1 and 3 only

133

ITEM GOES WITH ATTACHMENT E

Which of the following statements should be included when counseling the patient about the use of the ipratropium inhaler?

- A. Use should be stopped temporarily if a respiratory infection occurs.
- B. The drug is effective for relief of wheezing.
- C. The drug may increase the patient's blood pressure.
- D. Use the ipratropium before using the albuterol.

134

ITEM GOES WITH ATTACHMENT E

The verapamil is most likely to cause a drug interaction with which of the patient's previous medications?

- A. digoxin
- B. enalapril
- C. albuterol
- D. finasteride

Drug	Half-life (hours)	Conversion Ratio for Equivalent Dosing	
		Parenteral/ Transdermal (mg)	Oral (mg)
Fentanyl	1.5 to 6	0.1	na
Hydromorphone	2 to 3	1.5	7.5
Meperidine	3 to 4	75	300
Morphine	1.5 to 2	10	60 30 (sustained-release)

PERCENTAGE OF CALCIUM IN VARIOUS SALTS

<i>Salt</i>	<i>% Calcium</i>
Calcium carbonate	40
Tricalcium phosphate (calcium phosphate, tribasic)	39
Calcium chloride	27
Dibasic calcium phosphate dihydrate	23
Calcium citrate	21
Calcium lactate	13
Calcium gluconate	9

TABLE 2. Clinical Data for Treatment Groups

	Inhaled Fenoterol (n = 26)	Subcutaneous Epinephrine (n = 24)
Age (yr)*	15.3 ± 2.4	16.1 ± 2.2
Height (cm)*	158.0 ± 9.6	162.0 ± 9.2
Weight (kg)*	55.3 ± 16.0	57.3 ± 12.5
Sex (M/F)	11/15	10/14
Duration of asthma (yr)*	10.0 ± 4.6	11.4 ± 5.6
No. with wheezing > 24 hr	3	5
No. taking inhaled or oral steroids	4	6
No. taking oral theophylline	19	18
No. taking inhaled or oral adrenergic agent	13	14

*Values are means ± 1 SD.

TABLE 3. Pulmonary Function Before and After Administration of Fenoterol (F) and Epinephrine (E)*

Test (% Predicted)	Base Line		Time After Administration									
	F (n = 26)	E (n = 24)	10 min		20 min		60 min		90 min		120 min	
			F	E	F	E	F	E	F	E	F	E
FVC	55.6 ± 4.6	46.3 ± 3.6	...	...	79.1 ± 4.0	68.2 ± 4.3	80.9 ± 3.5	74.5 ± 3.8	80.5 ± 3.4	76.7 ± 4.7	80.3 ± 3.6	75.4 ± 4.7
FEV ₁	47.9 ± 4.6	41.3 ± 3.8	...	...	79.2† ± 5.0	62.2† ± 5.5	82.0 ± 4.7	69.1 ± 5.2	80.1 ± 4.8	71.9 ± 5.3	79.8 ± 4.8	72.0 ± 5.0
FEF _{25-75%}	27.9 ± 4.0	24.3 ± 3.2	...	...	89.1† ± 8.8	63.9† ± 7.8	94.2 ± 3.4	74.7 ± 7.5	93.4 ± 8.8	76.8 ± 6.6	90.6 ± 5.9	76.2 ± 6.8
PEF	49.1 ± 4.7	41.7 ± 4.2	83.5† ± 5.7	59.5† ± 4.9	90.4† ± 5.5	65.7† ± 5.1	91.8† ± 5.4	71.6† ± 5.0	93.5 ± 5.4	78.9 ± 4.6	91.9 ± 4.7	77.5 ± 4.2

*Values are means ± SEM. Abbreviations used are: FVC, forced vital capacity; FEV₁, one-second forced expiratory volume; FEF_{25-75%}, forced expiratory flow in middle half of FVC; PEF, peak expiratory flow.

† F significantly different from E, $P < 0.05$.

Changes in Half-Life with Increasing Dose		
Dose (mg)	Drug 1 $t_{1/2}$ (hr)	Drug 2 $t_{1/2}$ (hr)
40	10	3.47
60	15	3.47
80	20	3.47

A.J. is a 71-year-old man whose current medical problems and medication regimen are listed below. He brings in three new prescriptions to be filled.

Medical Problems

Hypertension

Atrial fibrillation

Chronic obstructive airway disease

Benign prostatic hyperplasia

Current Medications

Albuterol MDI 2 puffs t.i.d.

Digoxin 0.25 mg q.d.

Enalapril 5 mg b.i.d.

Finasteride 5 mg q.d.

Theophylline SR 300 mg t.i.d.

New Prescriptions

HCTZ 25 mg q.d.

Ipratropium MDI 4 puffs q.i.d.

Verapamil 80 mg t.i.d.

Candidate Handbook Question Key

Item	Key
001	C
002	C
003	C
004	A
005	A
006	D
007	A
008	A
009	A
010	D
011	C
012	B
013	C
014	C
015	D
016	D
017	C
018	D
019	C
020	D
021	B
022	D
023	A
024	A
025	D
026	D
027	B
028	D
029	D
030	D
031	B
032	D
033	A
034	B
035	C
036	C
037	C
038	B
039	A
040	B
041	B
042	D
043	C
044	B
045	B
046	C
047	C
048	A
049	C
050	A
051	A
052	B
053	C

054	D
055	A
056	B
057	A
058	A
059	C
060	B
061	D
062	B
063	B
064	A
065	C
066	A
067	C
068	A
069	C
070	C
071	D
072	B
073	C
074	D
075	C
076	C
077	C
078	D
079	A
080	B
081	A
082	D
083	A
084	C
085	B
086	D
087	D
088	D
089	B
090	C
091	C
092	C
093	C
094	C
095	C
096	C
097	D
098	A
099	C
100	A
101	D
102	B
103	C
104	A
105	B
106	B
107	D
108	C
109	B
110	B

111	C
112	B
113	B
114	D
115	C
116	A
117	A
118	A
119	B
120	D
121	B
122	B
123	A
124	B
125	D
126	A
127	C
128	C
129	D
130	C
131	D
132	C
133	B
134	A